AMENDMENTS TO THE CLAIMS

This listing of claims replaces all previous versions, and listings, of claims pending in this application.

Listing of Claims

1-9. (Canceled)

10. (Currently amended) A method for synthesizing a peptide dimer, comprising:

(a) providing first and second peptide chains linked to a linking moiety L_K, said chains each possessing multiple amino acid residues capable of disulfide bond formation upon oxidation; and

(b) oxidizing in a single oxidation step said peptide chains in a manner effective to preferentially promote formation of disulfide bonds between residues in the same peptide chain relative to formation of disulfide bonds in different peptide chains, and wherein at least 50% of said peptide dimer comprises a peptide chain having an intrapeptide disulfide bond.

11. (Previously presented) The method of claim 10, wherein step (b) comprises treatment with an oxidizing composition containing an oxidizing reagent in an amount effective to minimize reaction products in which a residue of the first peptide chain binds to a residue of the second peptide chain.

12. (Previously presented) The method of claim 11, wherein the oxidizing reagent is dimethyl sulfoxide.

13. (Previously presented) The method of claim 12, wherein the oxidizing composition comprises approximately 15% to 100% (v/v) dimethyl sulfoxide.

14. (Previously presented) The method of claim 13, wherein the oxidizing composition comprises approximately 50% to 100% (v/v) dimethyl sulfoxide.

15. (Canceled)

16. (Previously presented) The method of claim 14, wherein the oxidizing composition comprises approximately 80% to 100% (v/v) dimethyl sulfoxide.

17. (Previously presented) The method of claim 16, wherein the oxidizing composition comprises approximately 100% (v/v) dimethyl sulfoxide.

18. (Currently amended) The method of claim 10, ~~claim 1,~~ wherein the first peptide chain is approximately 10 to 40 amino acid residues in length, binds to the erythropoietin receptor, and contains a sequence of amino acids X3X4X5GPX6TX7X8X9, wherein X3 is C or homocysteine (Hoc), X4 is R, H, L or W, X5 is M, F, I or nor-leucine (J), X6 is selected from any one of the 20 conventional amino acids and J, X7 is W, 1-naphthylalanine (B) or 2-naphthylalanine (U), X8 is D, E, I, L, or V, and X9 is C or Hoc; and the second peptide chain is approximately 10 to 40 amino acid residues in length, binds to the erythropoietin receptor, and contains a sequence of amino acids X'3X'4X'5X'6X'7X'8X'9, wherein X'3 is C or Hoc, X'4 is R, H, L or W, X'5 is M, F, I or J, ~~I,~~ X'6 is selected from any one of the 20 conventional amino acids and J, X'7 is W, B or U, X'8 is D, E, I, L or V, and X'9 is C or Hoc.

19. (Previously presented) The method of claim 18, wherein one or more of said amino acid residues are genetically coded L-amino acids.

20. (Previously presented) The method of claim 18, wherein the amino terminus of at least one of said peptide chains is modified.

21. (Previously presented) The method of claim 10, wherein at least one of said peptide chains comprises a non-naturally occurring amino acid residue.

22. (Previously presented) The method of claim 10, wherein at least one of said peptide chains comprises an amino acid residue, wherein a naturally occurring side chain of said amino acid residue is replaced with a non-naturally occurring side chain.

23. (Previously presented) The method of claim 10, wherein said first peptide chain binds to the erythropoietin receptor and wherein said second peptide chain binds to the erythropoietin receptor.